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8791 7590 03/30/2009

BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

EXAMINER

MOORTHY, ARAVIND K

ART UNIT

PAPER NUMBER

2131

DATE MAILED: 03/30/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/538,926

03/30/2000

Vance C. Bjorn

3022P019

8632

TITLE OF INVENTION: CRYPTO-PROXY SERVER AND METHOD OF USING THE SAME

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	06/30/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

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8791 7590 03/30/2009

BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP
 1279 OAKMEAD PARKWAY
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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE-FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/538,926	03/30/2000	Vance C. Bjorn	3022P019	8632

TITLE OF INVENTION: CRYPTO-PROXY SERVER AND METHOD OF USING THE SAME

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	06/30/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
MOORTHY, ARAVIND K	2131	713-186000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/147; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

1

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2

3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.111. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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EXAMINER

MOORTHY, ARAVIND K

ART UNIT

PAPER NUMBER

2131

DATE MAILED: 03/30/2009

Determination of Patent Term Extension under 35 U.S.C. 154 (b)

(application filed after June 7, 1995 but prior to May 29, 2000)

The Patent Term Extension is 0 day(s). Any patent to issue from the above-identified application will include an indication of the 0 day extension on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Extension is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability**Application No.**

09/538,926

Applicant(s)

BJORN ET AL.

Examiner

Aravind K. Moorthy

Art Unit

2431

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERIT IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 13 December 2007.
2. ☒ The allowed claim(s) is/are 1-26.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

1. This is in response to the communications filed on 13 December 2007.
2. Claims 1-26 are pending in the application.
3. Claims 1-26 have been allowed.

Information Disclosure Statement

4. The examiner has considered the information disclosure statement (IDS) filed on 11 December 2007 and 13 December 2007.

Allowable Subject Matter

5. Claims 1-26 are allowed.

The following is an examiner's statement of reasons for allowance:

The current application is directed towards a method of providing a certificate from a client to a server is disclosed. The method comprises receiving a request for a certificate from the server and forwarding the request to a biometric certification server (BCS). The method further includes receiving a biometric identification from the client and forwarding the biometric identification to the BCS. If the biometric identification matches a registered user on the BCS, receiving a certificate including a public key of the client certified by the BCS, and forwarding the certificate to the server, thereby identifying the client to the server.

The closest prior art to the current application is the combination of Hoffman et al U.S. Patent No. 6,012,039 (hereinafter Hoffman) and Ganesan U.S. Patent No. 5,535,276 (hereinafter Ganesan). Hoffman is directed towards a tokenless authorization of a reward transaction between an issuer and a recipient using an electronic identifier and at least one recipient biometric sample, the method comprising the following steps. A recipient registration step,

wherein a recipient registers with an electronic identifier at least one registration biometric sample. An issuer registration step, wherein the issuer registers identification data with the electronic identifier. During a transaction formation step, wherein an electronic reward transaction is formed between the issuer and the recipient, comprising issuer bid identification data, transaction data, and at least one recipient bid biometric sample, the bid biometric sample is obtained from the issuer's person. In at least one transmission step, the issuer bid identification data, the transaction data, and recipient bid biometric sample are electronically forwarded to the electronic identifier. In a recipient identification step, the electronic identifier compares the bid biometric sample with at least one registered biometric sample for producing either a successful or failed identification of the recipient. In an issuer identification step, the electronic identifier compares the issuer's bid identification data with an issuer's registered identification data for producing either a successful or failed identification of the issuer. Thereby, upon successful identification of the recipient and issuer, a reward transaction is authorized for debit or credit settlement of reward units from the recipient's rewards account, without the recipient presenting any personalized man-made tokens such as smartcards or magnetic swipe cards. Ganesan is directed towards a system, such as a system utilizing a Kerberos protocol, system users each have an associated asymmetric crypto-key. The security of communications over the system is enhanced by a first user generating a temporary asymmetric crypto-key having a first temporary key portion and an associated second temporary key portion. The second temporary key portion is encrypted by the first user with the first private key portion of the first user crypto-key to form a first encrypted message. Another user, preferably an authentication server, applies the second private key portion and the public key portion of the first user crypto-key to the first

encrypted message to decrypt the second temporary key portion and thereby authenticate the first user to the security server. The authentication server then encrypts the first encrypted message with the second private key portion of the first user crypto-key to form a second encrypted message. The first user next applies the public key portion of the first user crypto-key to decrypt the second encrypted message and obtain the second temporary key portion, thereby authenticating the security server to the first user.

Hoffman describes a reward authorization system between an issuer and a recipient, in which recipient biometric data is utilized (Hoffman, Abstract). A server stores pre-verified recipient biometric data (Hoffman, column 6, line 66 to column 7, line 8). When a recipient makes a bid for a reward, they provide a sample of biometric data, and both the bid and the associated biometric data are transmitted to the server. The server then verifies a match between the submitted biometric data and the sample biometric data (Hoffman, column 10, lines 1-21). Ganesan describes a system of providing a secure communication connection (Ganesan, Abstract; column 8, lines 9-43). The connection is secured when a first user generates a temporary key pair, on the user's computer, to encrypt a message and exchange the pair and message with a server (Ganesan, column 8, lines 20-25). This method allows another user to then further encrypt a message when the user generates their own temporary key pair to identify each other through the server. Thus, in each case, the temporary key pairs are generated by a communication initiator, and in response to initiating a communication (See Ganesan, column 8, lines 40-44; column 9, lines 17-54).

With respect to independent claim 1, a server generates a disposable public key/private key pair after user authentication, such that the user is not required to create the

disposable key pair. Neither Hoffman nor Ganesan, alone or in combination, teaches or suggests "the BCS generating a disposable public key/private key pair if the user is authenticated based on the biometric data." Hoffman merely describes receiving a biometric sample, attempting to match the biometric sample to biometric data already stored in a database, and sending a message as to whether the authentication was successful (Hoffman, column 10, lines 1-32). Thus, Hoffman merely performs a database search in response to receiving a recipient's biometric data sample, but fails to teach or suggest performing any cryptographic services after a user is authenticated based on biometric data. Therefore, Hoffman must fail to teach or suggest "the BCS generating a disposable public key/private key pair if the user is authenticated based on the biometric data." Furthermore, as discussed above, temporary key pairs are generated in Ganesan by communication initiators. There is no discussion within Ganesan that a server generates a disposable public key/private key pair after user authentication. Therefore, Ganesan also fails to teach or suggest performing any cryptographic services after a user is authenticated based on biometric data, and thus fails to teach or suggest "the BCS generating a disposable public key/private key pair if the user is authenticated based on the biometric data."

With respect to independent claims 10 and 24, the closest prior art was Matsumoto et al US 2001/0034836 A1 (hereinafter Matsumoto). Matsumoto is directed towards an authentication system 10 of this invention includes an authentication station 20 having a directory server 24 and a biometrics collation server 30 capable of collating biometrics data based on the biological features of a user, and a user terminal 60 connected to the authentication station 20 via a network 12. The biometrics data is transmitted from the user terminal 60. In the

authentication station 20, the biometrics collation server 30 collates biometrics data transmitted from a user with biometrics data registered in advance. The authentication station 20 can check validity of a digital certificate 66 by the directory server 24 and collates the biometrics data, thereby allowing personal authentication. However, the Matsumoto reference does not qualify as prior art. Matsumoto was filed on January 30, 2001 and relates back to a provisional application filed on January 31, 2000. The provisional application is in Japanese. The applicants have submitted a declaration and associated exhibits as proof that claims in the current application were invented prior to the earliest filing date of Matsumoto.

With respect to independent claim 13, the closest prior art is Hoffman in view of Jakobsson U.S. Patent No. 6,587,946 B1 (hereinafter Jakobsson). Jakobsson is directed towards a method of forwarding an encrypted message sent to a primary recipient having a secret key to at least one secondary recipient comprising the steps of sharing portions of the secret key among a predetermined threshold number of proxy servers greater than one, upon receipt of an encrypted message by the predetermined threshold number of proxy servers, each of the predetermined threshold number of proxy servers modifying the message by applying the key portion to the encrypted message, the result of the modification comprising a message secret to the predetermined threshold number of proxy servers but decryptable by at least one secondary recipient, and forwarding the resultant message to at least one secondary recipient. This method and system for quorum controlled asymmetric proxy encryption has uses ranging from efficient key distribution for pay-tv, to methods for distributively maintaining databases. The scheme, which can use either an ElGamal, or an ElGamal encryption based on Elliptic Curves or an ElGamal related encryption algorithm, leaks no information as long as there is no dishonest

quorum of proxy servers. As discussed above, Hoffman describes a method that utilizes a biometric sample to authenticate a user in a transaction. A biometric data sample is transmitted to a system which attempts to locate or verify a match to an existing biometric sample (Hoffman, column 9, line 44 to column 10, line 32). However, Hoffman merely matches a biometric data sample with pre-stored samples Hoffman, and fails to teach or suggest performing any cryptographic services after a user is authenticated based on biometric data. Jakobsson describes a system for providing an encrypted message to a second recipient when the primary recipient is unavailable (Jakobsson, Column 3, lines 9-15; Column 5, lines 1-47). In the system, portions of the primary recipient's private encryption key are shared among a quorum of proxy servers (Jakobsson, Column 3, lines 37-41; Column 7, lines 25-28). Each of the proxy servers modifies the message so that it can be delivered to a secondary recipient such that the secondary recipient can decipher the message (Jakobsson, Abstract). However, Jakobsson fails to discuss the use of biometric data in the messaging system. The current application claims a crypto-server having a crypto-proxy interface that receives requests for cryptographic functions, receives biometric data, and returns data to a client after the cryptographic function has been performed. Further, the cryptographic function is performed after a user has been authenticated by an authentication engine of the crypto-server. As discussed above, Hoffman fails to teach or suggest performing any cryptographic functions after a user has been authenticated based on biometric data. Furthermore, as discussed above, the messaging system described in Jakobsson fails to teach or suggest the use of biometric data in messaging process or the messaging proxy servers. Thus, Jakobsson also fails to teach or suggest a crypto-server for

receiving requests, receiving biometric data, and returning data after the requested cryptographic function is performed and the user is authenticated. Therefore, neither Hoffman nor Jakobsson teaches or suggests a crypto-server having a crypto-proxy interface that receives requests for cryptographic functions, receives biometric data, and returns data to a client after the cryptographic function has been performed and the biometric data of the user has been authenticated.

With respect to independent claim 22, the current application claims "the remote crypto-server to generate a disposable public key/private key pair and perform the requested cryptographic function when the user is successfully authenticated using the biometric data." Similar to the discussion above, neither Hoffman nor Ganesan describe or suggest a remote crypto-server to generate a public key/private key pair when a user is authenticated using biometric data.

With respect to independent claim 23, the current application claims a crypto server that generates a disposable public key/private key pair and performs a cryptographic function, where the crypto server further authenticates a user based on biometric data. For reasons similar to the discussion above, neither Hoffman nor Ganesan describe or suggest the crypto server to generate a disposable public key/private key pair as claimed in claim 23.

Any claims not directly addressed are allowed on the virtue of their dependency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aravind K. Moorthy whose telephone number is 571-272-3793. The examiner can normally be reached on Monday-Friday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aravind K Moorthy/
Examiner, Art Unit 2131

/Ayaz R. Sheikh/
Supervisory Patent Examiner, Art Unit 2131